REMARKS

This is a full and timely response to the Office Action of December 22, 2008. Reconsideration and allowance of the application and all presently pending claims are respectfully requested.

Response to new matter and 35 USC 112 rejections

On pages 2 through 4 of the Office Action, the Examiner has claimed that the wording "wherein the nodes are not topic dictionaries" included in previously presented claims 1, 10, 27 and 28 has no support in the specification as filed. The Examiner has thus rejected these claims and the dependent claims therefrom as being indefinite and for introducing new matter. The Examiner has further rejected these claims as introducing a negative limitation.

Applicant respectfully disagrees with these rejections. As noted in Section 2173.05(i) in the Manual of Patent Examining Procedure,

> The current view of the courts is that there is nothing inherently ambiguous or uncertain about a negative limitation. So long as the boundaries of the patent protection sought are set forth definitely, albeit negatively, the claim complies with the requirements of 35 USC 112, second paragraph… A claim which recited the limitation … in order to exclude the characteristics of the prior art product, was considered definite because each recited limitation was definite… In addition, the court found that the negative limitation…was definite because the boundaries of the patent protection sought were clear…
>
> Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims…Note that a lack of literal basis in the specification for a negative limitation may not be sufficient to establish a *prima facie* case for lack of descriptive support.

TMEP, Section 2173.05(i) (case citations omitted).

Applicant submits that the language "wherein the nodes are not topic dictionaries" is acceptable as a negative limitation, and has adequate support in the specification, even if not literal support. The present invention deals with, in part, topic selection and context recognition for real-time language translation. The recited limitation is distinctive of prior art that discloses merely analyzing input text to identify certain words known to correspond to particular topics (i.e., a "keyword" approach).

As disclosed, the present invention employs an ontological database which has a more complex structure not limited to merely determining which single specific topic it is that each word pertains to (see, e.g., paragraph 0057). Previous approaches are distinguished in paragraphs 0055-0056. As paragraph 0058 explains, "Ontologies... are lexical hierarchies organized ... [by] classifying words according to sub-classes and super-classes, not topics." A topic may be a super-class (hypernym), but not all super-classes are topics. Thus, the use of the nodes in an ontological database for this identification process implies a more nuanced approach than the mere use of matching words in the input stream to a set of topics (e.g., as represented by a topic dictionary). The cited limitation "wherein the nodes are not topic dictionaries" derives from this aspect of the discussion within the flow of paragraphs [0056] through [0061]. As this alternative element is positively (if not literally) recited in the specification, Applicant submits that (a) the claim term has adequate support, and (b) it may be explicitly excluded in the claims.

The objection on page 4 of the Office Action that the claims fail to point out what the nodes are if they are not topic dictionaries is also traversed. The nodes are what the words in the message are matched to in order to determine a topic, as claimed in each of the independent claims. The node can be a hypernym or a holonym, for example, but cannot be a topic dictionary according to the claims.

By stating that "the nodes are not topic dictionaries", the reader is led to recall that the ontological database, mentioned in the immediately preceding clause in each independent claim, can be a many-tiered system with word interrelationships which go far beyond a topic dictionary. The cited clause thus distinguishes the approach used for topic identification from previous approaches by indicating that nodes are organized in the fashion of an ontological database. Applicant thus submits that the cited limitation is appropriate in that it definitely sets forth the bounds of patent protection. Thus, Applicant submits that the independent claims are compliant with 35 USC 112 according to MPEP Section 2173.05(i).

Response to 35 USC 103 rejections

In the non-final Office Action dated December 22, 2008, the Examiner has rejected all pending claims under 35 USC 103(a) as follows:

Claims 1, 5, 8-12, 15-18 and 27: Sadhwani in view of Miyahira

Claims 2-4, 6-7, 13-14: Sadhwani and Miyahira in view of Wood

Claims 28-30: Chong in view of Miyahira

Applicant submits that these rejections are improper and that the present claims are allowable over all prior art of record, considered singly or in combination. Applicant's previous response dated September 30, 2008 distinguished the presently pending claims over the prior art of record, specifically with regard to the Miyahira reference. Applicant further distinguishes the Miyahira reference herein.

In the Office Action, the Examiner has cited Miyahira against the following independent claim elements:

> using a first selected translation dictionary from a plurality of available translation dictionaries, wherein the first selected dictionary is selected according to a topic detected by matching words in the first SMS message to nodes in an ontological database, wherein the nodes are not topic dictionaries and wherein each word of the matched words is associated with a set of hypernyms and holonyms.

The Examiner specifically cites Fig. 3 and column 7, line 46 to column 8, line 67 of Miyahira, stating on page 6 of the Office Action that Miyahira "detects the topic of the input text based on keywords within the text and matches them with nodes (topic dictionaries within the database) wherein the nodes are not topic dictionaries (user dictionary, col., 8, line 46) and wherein each word of the matched words is associated with a set of hypernyms or holonyms..." On the one hand, the Examiner admits that the nodes are topic dictionaries, which is contrary to the language being claimed. On the other hand, the Examiner states that the "user dictionary" is not a topic dictionary. However, even if the user dictionary is not a literal topic dictionary, other dictionaries listed with the user dictionary are topic dictionaries, and there is thus no matching of words with nodes in an ontological database as claimed.

In addition, Miyahira decides whether to use one sublanguage dictionary over another through a system of "keywords". Miyahira's system relies upon determining compound word matches with domain dictionaries in order to prioritize and switch dictionaries. Miyahira's method is more prone to errors as a result of lack of nuance. One can easily conceive of numerous situations where any compound words being used as keywords might be not intended by its author or speaker as signifying the particular subject domain that the keyword is tied to. For example, even though "back stroke" may indicate a reference to the sport of swimming in the majority of cases, and could conceivably be a keyword, it may in fact refer to a medical situation involving a ruptured artery, and only an assessment of the context can accurately distinguish. Likewise "common stock" may be used primarily when discussing financial business, but such a term may not-infrequently be used when discussing anything from farming to pharmaceuticals. Context is the true distinguishing factor.

Further, while Miyahira describes the value of being able to switch dictionaries, and proposes one method for doing so, its method for switching differs considerably from the one proposed and claimed according to the present invention. The Miyahira approach is limited both in its efficiency and its efficacy. In particular, repeated reference is made in Miyahira to eight particular sublanguage dictionaries in use: User dictionary, Base dictionary, Internet, Art, Business, Sports, Politics, and Entertainment. This is made clear in columns 5 through 8. These dictionaries have a fixed priority order which can be changed. By contrast, the present invention provides a sublanguage dictionary with vastly more capabilities, including the ability to

determine which dictionary is most properly employed and when (see paragraph 0059, for example, of the present application publication), such as when a dictionary is selected based upon topic detection as claimed.

Topic detection according to the present invention is distinguished from Miyahira by the use of ontological databases as claimed. In an exemplary but not limiting respect, the difference can be likened to a genealogy tree (navigating down to the most appropriate node), as opposed to the waterfall approach suggested by Miyahira (using compound keywords to "fall" from tier to tier until a match is found). Nowhere in Miyahira's discussion is a reference to "context" or contextual analysis found. Furthermore, neither Sadhwani nor Chong ever mention ontological databases. Thus, the following claim 1 elements – specifying the matching to nodes in an ontological database, and the resulting association to a topic – correspond to elements not shown by Miyahira.

The end result of the analysis is to choose a topic dictionary for use in translation, as with Miyahira. However, the identification of *which topic dictionary to use and when*, depends in the present invention upon an analysis with an ontological database containing more hierarchical organization than a simple topic dictionary such as Miyahira presents. It should be further noted that in the context of translating SMS messages specifically, the very brevity of the message (limited generally to 160 characters) requires a translation method which can detect topic given an extremely limited amount of context. The keyword approach used to identify topics in the cited Miyahira reference is crude and highly limited, which severely minimizes its effectiveness

in a short message context, while the present approach as claimed is both (1) sensitive to context, and (2) highly accurate with a small amount of context.

As noted in paragraph 0058 of the present application publication, the use of this methodology "has not previously been thought of as a natural candidate for knowledge-based approaches" to dictionary selection. This remains true even in view of Miyahira, Sadhwani and Chong alone or in combination.

The Sadhwani and Chong references have been distinguished in prior responses and clearly lack in teaching context or topic recognition. To the extent Miyahira discloses any type of context or topic recognition and dictionary selection, it does so by matching keywords with topic specific dictionaries. As noted above, this clearly teaches away from the knowledge-based approach of the present invention, wherein the nodes in the ontological database are not topic dictionaries and wherein each word of the matched words is associated with a set of hypernyms and holonyms.

For the above reasons, Applicant submits that none of the Sadhwani, Chong or Miyahira references, either singly or in combination, anticipates, discloses or obviates the invention as presently claimed. The prior art must teach or suggest *all* claim elements in order to find anticipation or obviousness, and *all* words in a claim must be considered in judging the patentability of that claim against the prior art (see MPEP §§ 706.02(j) and 2143.03). Applicant thus submits

that all of the presently pending claims are allowable, and that the remaining dependent claims are also allowable based upon being dependent from an allowable independent claim.

CONCLUSION

Based on the foregoing, Applicant submits that the present application is in position for prompt adjudication and allowance. Applicant believes that all of the claims currently pending in the present application are in condition for allowance, and an early notice to that effect is earnestly solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the present application, the Examiner is invited to contact Applicant's undersigned representative at the address and phone number provided below. A three-month extension of time request is being filed simultaneously with this response. The Commissioner is hereby authorized to charge Deposit Account No. 50-0766 in payment of the required fees.

Respectfully submitted,
WILLIAMS MULLEN, PC

Thomas F. Bergert
Counsel for Applicant
Reg. No. 38,076

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Attached: Petition for 3-month extension of time

Thomas F. Bergert, Esq.
Williams Mullen, PC
8270 Greensboro Drive, Suite 700
McLean, Virginia 22102
(703) 760-5200
6539860